

PTILIIDAE (COL.) FROM THE YAP ISLANDS

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FEATHER-WING BEETLES, or ptiliids, are amongst the smallest beetles, rarely exceeding one millimetre in length. Their popular name is derived from the characteristic wing structure in which the wing is reduced to a very narrow but greatly elongated strap-like membrane, bearing numerous long hairs. The beetles occur in all types of humid habitats or microhabitats and are thought to feed largely on microscopic moulds or fungi. Collecting is achieved by sieving suitable debris and extracting the beetles through funnels. Distribution of ptiliids is worldwide, although most faunas beyond Europe are inadequately known.

This paper deals with a small collection of ptiliids made mostly during July and August 1950 by R. J. Goss in the Yap Islands. Of the 34 specimens collected, eight species were present, including two new to science. These records are the first from Micronesia. The material belongs to the Bernice P. Bishop Museum, Honolulu, and duplicates will be placed in the Manchester Museum.

The Yap Islands are an island group in the western Pacific, being part of the mostly small 930 islands making up the archipelago of the Caroline Islands, themselves part of the wider region known as Micronesia. Four main islands — Yap (the largest), Gagil, Tomil and Map, Rumung and a few tiny islets, make up the Yaps, which cover 100 square kilometres. They are located within the tropics at 9° north of the Equator, are surrounded by coral reefs, have a rugged surface — highest point 178m, and a low population, 2744 in 1948 (Gressitt, 1954).

Bambara frosti (Dybas)

Yap Is.: Dugor, 14.viii.1950, 1 female; Kanif, 30.vii.1950, 1 female. Gagil Is.: 19, 20, 21.vii.1950, 4 females. Tomil Is.: 6.vii.1950, 1 female.

Tropical, anthropophilic, parthenogenetic and probably largely pantropical species. Described from Florida and subsequently recorded from the Galapagos Islands, Madagascar, Reunion, Yemen and Palestine (Johnson, 1985, 1989).

Bambara testacea (Britten)

Yap Is.: North, 16.vii.1950, berlese funnel, 1 female; Kanif, 30.vii.1950, 2 females. Gagil Is.: 21.vii.1950, 1 female. Tomil Is.: 7, 8.vii.1950, 6 females.

Pantropical, anthropophilic and parthenogenetic species. Currently recorded from southern USA, Bahamas, Bermuda, Madagascar, Seychelles, Mascarenes, Bismarck and Solomon Islands (Johnson, 1985).

Dipentium gossi sp.n.

Length 0.62 - 0.67mm. Dark brown, legs paler; antennae yellowish, two basal segments slightly darker. Body rather broad, slightly convex; rather shining; pubescence extremely short and flat, barely detectable. Head sculptured much as pronotum, with numerous scattered and somewhat coarse punctures, reticulation distinct; eyes moderately large; head breadth 0.22 - 0.23mm; antennae moderate in length, 0.30 - 0.31mm, middle segments over three times as long as broad. Pronotum 1.73 - 1.86 times as broad as long, breadth 0.30 - 0.32mm, broadest at base, which is much wider than elytral base; hind margin arcuate, much longer than front margin, not sinuate close to hind angles which are broadly rounded off; sides almost straight to only very feebly convexly curved, narrowed to the front; front angles obtusely effaced; sides narrowly margined in front half, this margin flattened and widened basally and around hind angles; surface closely and irregularly covered with moderate-sized punctures which are half to two diameters apart on disc; reticulation very distinct, consisting of large and almost isodiametric meshes. Elytra 2.09 - 2.19 times as long as pronotum, 1.12 - 1.16 times as long as broad, breadth 0.32 - 0.33mm; sides curved, broadest in front of middle; surface closely puncto-pustulate, predominantly punctate basally, these punctures similar in size to those on the pronotal disc; reticulation distinct. Scutellum with basal margin slightly obtuse in middle, somewhat beaded. Legs thick, hind tibiae c. 0.03mm in width. Metasternum barely longer than mesosternum, disc finely but not closely punctured; microsculpture composed of large and fine meshes, very distinct at sides, less so medially.

Male: aedeagus fig. 1.

Holotype male. Yap Is.: South, 27.vii.1950.

Paratypes. Yap Is.: South, 25.vii.1950, 3 ex., 27.vii.1950, 2 ex.

On body shape, sculpture, eye size and barely detectable elytral pubescence, this new species is most closely allied to *reticulatum* (Britten). It differs from that species in being smaller, more flattened, darker brown and with a different aedeagus. Britten's species is only known from the Seychelles and Nicobar Islands (Johnson, 1985).

Ptinella yapensis sp.n.

Length 0.64 - 0.66mm. Body moderately broad, weakly convex, shining, closely pubescent; hairs flat, hardly overlapping, elytral ones short, c. 0.016mm. Colour pale brown, legs and antennae yellowish. Head without a transverse suture behind; reticulation distinct; head breadth 0.23 - 0.24mm; eyes moderately large; antennae moderately long, 0.34 - 0.35mm. Pronotum 1.52 - 1.65 times as broad as long, breadth 0.28 - 0.29mm; broadest around middle; sides rounded, sinuate before hind angles which are strongly rectangular; side margins fine; front angles not produced; surface coarsely reticulate, meshes very distinct, large and unequal; hind margin distinctly narrower than elytral base. Elytra c. twice as long as

pronotum and only slightly (c. 1.1 times) longer than broad, breadth 0.31-0.33mm; broadest around middle; sides weakly curved; apices separately rounded; surface closely covered with flattened granules and very fine reticulation; epipleural carina lacking. Mesosternum with front angles well-marked, hardly toothed. Metasternum rather short, barely longer than mesosternum. Pygidium without a median, apical tooth. Winged. Female: spermatheca fig. 2.

Holotype female. Yap Is.: Ruul dist., 18.viii.1950.

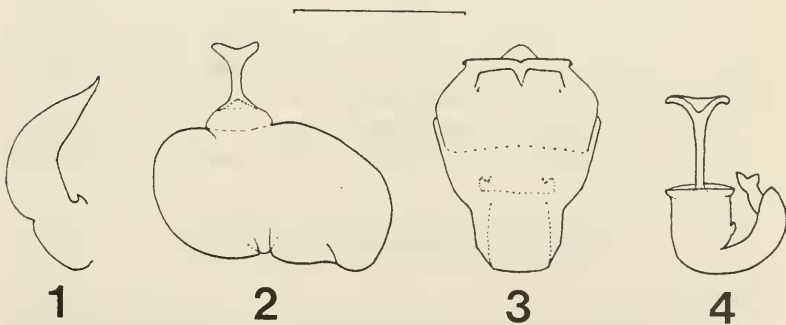
Paratypes. Yap Is.: 2.vii.1950, 1 female; Dugor, 14.viii.1950. 1 ex. Tomil Is.: 7.vii.1950, 1 female.

This species externally resembles normal individuals of the New Zealand *taylorae* Johnson (Johnson, 1982a), from which it may be most easily distinguished by the spermatheca. *P. taylorae* however is a dimorphic species, the dominant form being the vestigial morph. The strongly rectangular hind angles of the pronotum will easily distinguish *yapensis* from the Seychellean *impressicollis* Britten (Johnson, 1985) a species with a somewhat similar spermathecal type.

Actinopteryx lancifer Fauvel

Yap Is.: beach by sea, 1.vii.1950, 1 female.

Tropical, halophilous, Indo-Pacific species, found amongst decaying seaweed and other shore refuse. Recorded from New Caledonia, Fiji, Madagascar, Somalia, Seychelles and Mascarene Islands (Johnson, 1985).



Legend

Fig. 1-4, genitalia of Ptiliidae: 1, *Dipentium gossi* sp.n., aedeagus, lateral view; 2, *Ptinella yapensis* sp.n., spermatheca; 3, *Actinopteryx parallela* Britten, aedeagus, ventral view; 4, *A. parallela*, spermatheca. (Scale line: 0.1mm.)

Actinopteryx parallela Britten

Yap Is.: Colonia, 24.viii.1950, 1 male.

A little-known halophilous species, dorsally indistinguishable from the Atlantic/western Indian Ocean *fucicola* (Allibert) in shape, sculpture and toothed pygidium of the male. Ventrally, the sides of the mesosternal disc have sloping carinae as in the Indo-Pacific *lancifer* Fauvel and the eastern Pacific *hoguei* Johnson. The relationships of these species were discussed earlier, and their characteristic genitalia of both sexes figured (Johnson, 1982b, 1985). Outline drawings of the genitalia of *parallela* are figured herewith, figs. 3 - 4.

I have studied four syntypes (1 male, 3 females (in the National History Museum, London and Manchester Museum)) of *parallela* from Australia, as well as the holotype (female with missing spermatheca (M. Kubota coll.)) of *Acrotrichis longipennis* Kubota (Kubota, 1943), and find them to be identical (**syn. n.**). This synonymy was only confirmed by the discovery of other Asian material, which permitted the genitalia to be studied.

Other material. Japan — Funabashi, Chiba-leen, at seashore, 30.ix.1942, leg. I. Fujiyama & N. Watanabe, 2 males, 1 female (M. Kubota coll.). China — Hopei: Peitaiho, 29.viii.1966, leg. P.M. Hammond, 1 female (Nat. Hist. Mus. London). Philippine Is. — Luzon: Long Beach, Cavité City, 27.ix.1981, seaweed etc on beach, leg. M.D. Darby, 1 male, 1 female (Manchester Mus.).

The homonym *Acrotrichis longipennis* Kubota 1943 (not Casey 1885) was earlier (Waltz, 1984) replaced unfortunately by a further homonym: *kubotai* Waltz, 1984 (not Sundt 1969), which was prematurely synonymised (Waltz, 1987) with *Actinopteryx fucicola* on the basis of incomplete information.

Acrotrichis (s.str.) britteni Johnson

Yap Is.: South, 25.vii.1950, on banana, 1 female. Gagil Is.: 20.vii.1950, 1 female. Tomil Is.: 5, 7, 9.vii.1950, 3 females.

Tropical, anthropophilic, parthenogenetic and oriental species. Known from Seychelles, Mascarenes, Sri Lanka and other parts of tropical Asia (Johnson, 1988).

Acrotrichis (Flachiana) cursitans (Nietner)

Yap Is.: Dugor, Weloy, 14.vi.1957, at light, 1 female. Tomil Is.: 7.vii.1950, 1 female.

Palaeotropical and anthropophilic species. Recorded from Sri Lanka, Seychelles, Mascarenes, Madagascar, South Africa, Ivory Coast, Nigeria and Philippine Islands (Johnson, 1985).

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References

- Casey, T.L. 1884-1885. Contributions to the descriptive and systematic coleopterology of North America. Part 2. *Trans. Amer. Philos. Soc.*: 61-198.
- Gressitt, J.L. 1954. Introduction. *Insects of Micronesia* 1: 75-79.
- Johnson, C. 1982a. An introduction to the Ptiliidae (Coleoptera) of New Zealand. *N.Z. Journ. Zool.* 9: 333-376.
- , 1982b. Ptiliidae (Coleoptera) from the Galapagos and Cocos Islands. *Brenesia* 19/20: 189-199.
- , 1985. Revision of Ptiliidae (Coleoptera) occurring in the Mascarenes, Seychelles and neighbouring islands. *Entomologica basil.* 10: 159-237.
- , 1988. Revision of Sri Lankan Acrotrichines (Coleoptera: Ptiliidae). *Revue suisse Zool.* 95: 257-275.
- , 1989. Ptiliidae (Coleoptera) of the Arabian Peninsula. *Fauna of Saudi Arabia* 10: 103-107.
- Kubota, M. 1943. Notes on some Ptiliidae from Japan. *Trans. Kansai Entomol. Soc.* 13: 1-5.
- Sundt, E. 1969. Description of a new subgenus, *Flachiana*, and four new species of the genus *Acrotrichis* Motschulsky, 1848 (Col.: Ptiliidae). *Norsk ent. Tidsskr.* 16: 49-53.
- Waltz, R.D. 1984. A new name for *Acrotrichis longipennis* Kubota (Coleoptera: Ptiliidae). *Coleopt. Bull.* 38: 255.
- , 1987. A new synonym in *Acrotrichis* Motschulsky (Coleoptera: Ptiliidae). *Coleopt. Bull.* 41: 105.

Hazards of butterfly collecting — time for tea. Afghanistan, 1977

I paid my first and only visit to Afghanistan in July 1977. Though it was a business trip, fate — mostly in the form of the notoriously unreliable Ariana Afghan Airlines — permitted me to do sufficient butterfly collecting to produce a paper on the Afghan butterflies (1978, *Ent. Rec. J. Var.* 90: 191-198). The Walnut Blue (*Chaetoprocta odata*) turned out to be immensely common among the mud skyscrapers of Paghman, a new record for Afghanistan. Strings of up to two scores flew about the ancient walnut trees in the late afternoon in some sort of sexual display and competition. I established beyond doubt that *Thymelicus alaica* should be considered specifically distinct from any of the related European species, and I am still quite certain that one species in each of the *Lycaena caspius* and *Hyponephele davendra*-complexes deserves a specific status which they are not presently accorded.

The highlight of my visit was a car journey from Kabul to Mazar-i-Sharif, crossing the Hindukush by the Salang Pass. My English colleague, Evelyn, and I were accompanied by Afifa, a thoroughly modern and ravishingly beautiful Afghan nurse-tutor, whose job actually involved the